The fact is, that a new field for investigation and experiment has been opened, which no one as yet has fully explored, and no one can pretend to understand. The exploration of this field promises to throw light not only upon syphilis, but upon other contagious diseases, and even to add to our knowledge of the nature of specific poisons in general; but the work is yet undone, and any conclusions at this time are only premature.

3. The "unity," towards which it has been said that we are "drifting," is not the unity that we have left and abandoned. That was a *practical* unity, if I may be allowed the expression, which regarded one venereal sore as well as another as the possible precursor of constitutional infection, and which called upon the surgeon to burn out every chancre and to give the patient mercury to the verge of salivation, and to leave him in suspense for months and years before he could be assured that the treatment (?) had succeeded. *And the teachings of that unity were carried out in practice.*

The *possible* unity of the future may show that the chancroid and syphilis are not absolutely distinct, and that they are remotely dependent upon a common virus. Should this be established, it would be a fact of great scientific interest; it might lead to the discovery of some preventive against the scourge of syphilis, and in this way be of incalculable benefit; but, otherwise, it will affect the daily practice of the surgeon as little as the physician is influenced in his treatment of a case of variola by the knowledge that vaccinia is due to the same poison. There will still be two forms of one disease, which will be as distinct for all practical purposes as if they were radically distinct diseases, and patients afflicted with venereal ulcers will still have reason to bless the name of Bassereau and the dualism which he established.

HEIDELBERG, Nov. 1872.

P. S. Paris, Feb. 1873. Since my arrival in Paris I find the doctrine of "duality" is as strong here as ever. Ricord said to me the other day, *Mons., c'est un verité.* Fournier also is equally decided. French physicians and surgeons, however, have little, if any, knowledge of the investigations and experiments which have been made in other countries, especially in Germany.

ART. III.—*Contribution to our Knowledge of the Physiological Action of Atropia.* By H. C. WOOD, Jr., M.D., Clinical Lecturer on Diseases of the Nervous System in the University of Pennsylvania.

SOME years since I began an original study of the physiological action of belladonna, but the ground has since been so thoroughly gone over by others, as to render my task unnecessary. It seems proper, however, to put on record my unpublished experiments and clinical material, and they are therefore here offered as especially of corroborative value.

The first portion consists of experiments made on dogs as to the action of atropia on the circulation. Without going into a thorough discussion of the subject I remark :—

In Expt. No. 1, slight rise of arterial pressure and increase of the rapidity of the pulse, followed the injection of $\frac{1}{12}$th grain of atropia, in a dog whose pneumogastrics had been previously cut; in No. 2, there was decided rise of arterial pressure and pulse frequency after the injection of a grain of atropia in an old dog similarly mutilated; No. 3 agreed with the last as far as the arterial pressure was concerned, the pulse not having been noted; in No. 4, very slight rise of the pulse and decided increase of the arterial pressure occurred under similar circumstances; in No. 5 section of the par vagi in an atropized dog was followed by rise of arterial pressure, the cardiac portions of the nerves being insensible to the faradaic currents; in No. 6, section of the par vagi in an atropized dog was followed by no rise in pulse frequency, but an increase of arterial pressure.

The increase in the pulse rate, which atropia in several of these cases produced after division of the pneumogastrics, would seem to indicate that the alkaloid possesses a stimulant power upon either the accelerator nerves of the heart, or more probably their centres, and that the enormous increase of the number of the pulse beats per minute seen in the atropia poisoning, is not entirely due, as has been believed, to paralysis of the peripheral vagi, but also to a direct accelerating action upon the antagonists of the latter.

Bezold and Bloebaum have found that after section of the par vagi and spinal cord, artificial respiration being maintained, atropia fails to increase arterial pressure. Experiments 7, 8, 9 substantially confirm this, as any slight rise of arterial pressure that occurred can be accounted for by the increased frequency of the heart's action due to paralysis of the vagi, which in my experiments were not cut.

Expt. 1.—A moderate sized cur dog. At 3.40 P.M. the pneumogastrics were cut.

Time.	Pulse.	Arterial pressure.	Remarks.
4.05	190	90 to 115, mostly from 100 to 110	Dog quiet. One-twelfth grain injected into peritoneal cavity.
4.20	210	105 to 125, mostly from 110 to 120	One-twenty-fourth grain injected into peritoneal cavity. Mouth very dry.
4.30	......	....	One-sixteenth grain injected into peritoneal cavity.
4.45	......	95 to 110, going to 120 during struggles, and rarely down to 85	
4.55	......	As before	
4.58	......	....	Injected thirty minims of *fluid extract of aconite leaves* into peritoneal cavity.
5.13	194	As before	
5.23	152	65 to 75, going to 80 on violent struggles	Dog killed.

Expt. 2.—A very strong old terrier. Cut the par vagi at 9.30. A.M.

Time.	Pulse.	Arterial pressure.	Remarks.
3.50	201	Mostly 110 to 120, going up to 130 at times—rarely down to 90	Injected grain j. into the peritoneal cavity. Pipe in femoral artery.
4	224	125 to 135, going up to 145, rarely down 120	The pupils were widely dilated three minutes after injection. Dog quiet.
4.15	220	175 to 190,* 130 to 120**	Dog quiet.* Dog struggling violently.**
4.23	224	120 to 130	Injected grain j. Dog perfectly quiet.
4.30	224	105 to 115	Dog quiet.
4.31	......	90 to 130	Very violent struggles.
4.39	......	100 to 135	Struggles continue.
4.50	200	125 to 135	Dog quiet. Injected gr. j. into cellular tissue.
5	......	125 to 130	Efforts being made at vomiting. Breathing exceedingly hurried.
5.10	......	120 to 135. The single heart beat scarcely perceptible	Dog was let up, and was able to walk. He was killed.

Expt. 3.—A youngish, moderate sized cur. Cut the pneumogastrics at 3 P.M.

Time.	Pulse.	Arterial pressure.	Remarks.
3.26	......	140 to 145, rarely 135. Heart stroke 2 to 3	Injected one-third grain into left jugular. Tube in carotid.
3.39	......	115 to 160, falling 20 to 30 with each inspiration	Inspirations exceedingly deep and laboured. Dog struggling violently.
3.44	......	160 to 195, mostly 170 to 185. H. S. 8	Dog quiet.
3.58	......	140 to 145. H. S. 5.	
4	......	130 to 135, at times between respirations going to 150. H. S. 4	Respirations four a minute.
4.6	......	130 to 185, mostly above 150	Respirations twelve to fifteen a minute. Dog struggling some.
4.19	......	Mostly 170 to 185, going at times to 195, and on the forced respiration sometimes momentarily to 160	Respirations three a minute, very deep and quick. Arterial blood very dark.
4.25	......	125 to 135. H. S. 5	
4.27	......	....	Respirations more frequent. Injected one-third grain into peritoneal cavity.
4.34	......	105 to 110	Respirations continuous.
4.40	......	120 to 130	Dog quiet.
4.41	......	110 to 150	Dog struggling.
4.50	......	110 to 195, mostly 150—following respiration closely—going over 85 with a single one. H.S.3	
5	......	85 to 150. H. S. 2 to 3	Dog let up; the hind legs completely paralyzed; the front nearly so.

Expt. 4.—A youngish Scotch terrier. Cut the par vagum at 10 A.M.

Time.	Pulse.	Arterial pressure.	Remarks.
3.20	200	130 to 150. H. S. 1 to 3	One-third grain injected into peritoneal cavity. Tube in femoral artery.
3.25	210	....	
3.30	......	....	One-third grain injected.
3.39	198	....	
3.53	......	130 to 160, rarely to 165 and to 130. H. S. 1 to 3	
4	210	....	An accident put an end to the experiment.

Expt. 5.—A young dog. Exposed par vagum. 3.36 injected two grains into peritoneal cavity.

Time.	Pulse.	Arterial pressure.	Remarks.
3.55	......	130 to 150	Cut the pneumogastrics; very laboured efforts at respiration came on at once. Tube in carotid.
3.56	......	140 to 180 following respiration	
3.58	......	140 to 150	Respiration more quiet.
3.60	......	155 to 165	A very strong faradaic current was now applied to the distal end of the cut nerves. No apparent influence on the heart, but very marked effect on the breathing, and under the effort the mercury would rise to 170.
4.5	......	150 to 160	A faradaic current shows no influence on heart.
4.10	......	....	Passed for two minutes a very strong current through distal end of nerves without exciting any action on heart.
4.20	......	120 to 135	Let dog up; he could barely walk in a sprawling manner.

Expt. 6.—A young hound.

Time.	Pulse.	Arterial pressure.	Remarks.
4.20	118	130 to 140	Tube in femoral artery. Injected one-sixteenth grain into peritoneal cavity.
4.27	156	135 to 170	
4.29	154	120 to 160	Dog struggling.
4.40	......	....	Cut the pneumogastrics; the usual disturbance of respiration.
4.41	154	....	
4.50	154	135 to 144	
4.59	......	....	Injected one-sixteenth grain into peritoneal cavity.
5.3	180	....	
5.20	......	155 to 165	Breathing very laboured and noisy. Injected one-sixth grain.
5.35	180	Mostly 145 to 150, going up rarely to 175, and rarely down to 145	

Expt. 7.—A rather small terrier cur. Cut the spinal cord between sixth and seventh vertebræ at 3.12 P.M.

Time.	Pulse.	Arterial pressure.	Remarks.
3.30	......	50 to 55, going at times to 45 and to 60	Respiration regular. Dog quiet. Tube in carotid.
3.38	......	As before	Pupils decidedly contracted.
3.40	......	....	Injected one-half grain into peritoneal cavity.
3.51	......	50 to 57	Pupils fully dilated; otherwise dog as before.
4	......	50 to 57	Injected one-half grain into peritoneal cavity.
4.12	......	53 to 57, going at times to 45 and to 60	
4.18	......	....	Injected one-half grain into peritoneal cavity.
4.25	......	53 to 56, down at times to 40	Breathing very slow. Dog now killed.

Expt. 8.—A stout dog.

Time.	Pulse.	Arterial pressure.	Remarks.
2.30	......	180 to 225	
3.20	......	....	Cut cord between fifth and sixth vertebræ.
3.40	132	45 to 60	Injected one-half gr. into peritoneal cavity.
3.50	156	60 to 65, rarely to 70	
4	......	50 to 60, rarely 65	Injected two-thirds gr. into peritoneal cavity.
4.10	170	35 to 45, rarely 50	
4.20	......	....	Injected one and one-third grain.
4.46	......	45 to 60, rarely to 65	
5	......	75 to 95, rarely to 65 and to 100	
5.5	......	....	Injected one and a half grain.
5.15	......	75 to 85, rarely to 90	Individual heart beats are certainly stronger than before the injection.
5.45	128	75 to 85, rarely from 65 to 95	
6.6	112	As before	An accident put an end to the experiment.

Expt. 9.—A young spaniel.

Time.	Pulse.	Arterial pressure.	Remarks.
3	......	130 to 150, mostly above 140	Tube in carotid artery.
3.30	......	....	Cut cord between fifth and sixth vertebræ. Pupils were much contracted.
4	......	75 to 80. H. S. 4	
4.7	......	....	Injected one and a half grain into peritoneal cavity.
4.22	128	70 to 75, rarely to 65 and to 78. H. S. 4.	Pupils widely dilated.
4.33	136	60 to 75	Breathing, as all along, slow, regular, and deep.
4.45	......	....	Injected two grains.
4.55	......	60 to 70, rarely up to 73	
5.22	120	60 to 70. H. S. 6	
5.45	......	55 to 65	Blood coagulated in the artery.

I shall devote the remainder of this paper to the consideration of the asserted antagonism of morphia and atropia. I do not care here to enter fully upon this subject, but will simply state that the *medical value* of atropia in opium poisoning is to my mind a *completely established* fact. The remedial value of alcohol in cases of failure of the circulation after overdoses of opium every one probably will acknowledge. Yet no one would call the two drugs *antagonistic.* The relations of atropia and opium are probably very similar. The latter kills very generally by its influence on the respiratory centres, and it is a proven fact that in large doses atropia is a most powerful, and, as far as I know, the only known, direct stimulant to the respiratory centres, and when it has been used in opium poisoning it has been very commonly noted that improvement in the respiration is the first or among the first results. Even in fatal cases like that reported by Dr. S. W. Gross, in the number of this Journal for October, 1869, the antagonistic action of the drugs upon the respiratory centres is very evident, although life was not saved. Further, in this connection it must be borne in mind that very probably the excess of carbonic acid in the blood in opium narcosis is often an important factor in the production of the stupor.

There is here added the record of a number of cases in which large doses of atropia and morphia were given alone and in combination hypodermically, by Drs. J. E. Spencer, T. D. Davis, and Emory Eshleman, (*internes*), at Philadelphia Hospital, under my supervision.

Case 1.—I gave Mrs. R——, aged about 35 years, a hypodermic injection at 9 P. M., for a severe facial neuralgia. Fourteen drops of a solution of morphia (1 gr. to f℥j) were thrown into the substance of the deltoid muscle. No bleeding followed, but almost instantly the pain ceased, and in about five minutes the patient fell back into the bed, apparently insensible, with her jaws relaxed and falling, and the face pallid. After some little shaking she roused up and conversed rationally, complaining of feeling heavy, and of tingling in extremities. The pupils were contracted, but not to a very great degree. At 10 P. M. the pulse was 112, regular, quick, excited but weak; the respirations irregular, 15 or 20 per minute; the skin relaxed; the muscles in like condition; at times there was some rigidity of masseters, which was not permanent, however. The patient remained semi-unconscious but was readily aroused, and breathed regularly and deeply, so long as constantly told to do it, there being no difficulty in forced inspiration. She complained of queer sensations in the head, as well as of numbness, tingling, and dead feeling in the limbs. Turpentine, f℥vj, by injection did not move her bowels. Coffee was given and constant rousing, and forced voluntary respiration enjoined. Vomiting appeared first about 11 P. M. At 11½ P. M. the pupils were about the same, *i. e.*, decidedly but not extremely contracted; mobile within very narrow limits. The respiration 18, regular, rather shallow; the pulse 104, not very strong. She was easily aroused, and would carry on a conversation. Under stimulus of active conversation she roused up, laughing and talking brightly, and her pulse came down to 90 and became moderately strong, very regular; her breathing was at this time 18 a minute, regular. Whenever, however, the conversation ceased for a minute she would fall to sleep immediately, and the respirations would become very irregular, falling to 10 or 12 a minute, with occasional paroxysms of very rapid breathing; during the stupor the pulse would grow more frequent and weaker. She had several spells of vomiting. Brandy and coffee were given freely, but she probably threw up most of them.

At 1 A. M. a very severe spell of vomiting was followed by almost immediate unconsciousness, from which the patient was with difficulty aroused. The pupils did not vary any; the pulse ran up to 112; the respiration became very irregular and shallow.

At $1\frac{1}{2}$ the pulse was 150, and it was necessary constantly to keep shaking the patient and forcing her to make voluntary respirations. The pupils were not movable; the skin and extremities warm. I gave atropiæ sulph. gr. $\frac{1}{80}$ hypodermically. It dilated the pupils somewhat, but not up to the natural size; yet the respirations became evidently deeper and more regular. The pulse was not perceptibly affected, it remaining 150, very weak and small, almost thready.

We kept shaking her constantly. The brandy and coffee and ammonia were mostly thrown up by the vomiting which occurred; finally, however, raw brandy in f℥ss doses seemed to be absorbed and was given at short intervals.

By 2 A. M. the respirations had become irregular again, and pupils gone back to the original contraction. The pulse very weak, 156; the patient very heavy, but could be roused readily by loud talking. It now became necessary to constantly hollow at her to make her breathe, for when left to itself the respiration became very irregular and entirely insufficient. An injection of gr. $\frac{1}{80}$ atropiæ sulph. was followed by some slight dilatation of the pupil and improvement in respiration, but no change of intellection, and in about half an hour all the symptoms returned with increased intensity. The skin remained warm, but the pulse became exceedingly weak. The patient was never, however, in a dead stupor, but could always be roused by shaking and even by loud speaking, when she would do as commanded, but if left alone fell into an alarming state. At $2\frac{1}{2}$ gave gr. $\frac{1}{80}$ atrop. sulph. with transient effects as before. At 3 A. M. gave gr. $\frac{1}{60}$. The pupils soon dilated very decidedly to more than normal size; the respirations became easy and regular, and about normal in frequency. By $3\frac{1}{2}$ A. M. the face and neck were a deep bright scarlet, and there was double vision from paralysis of accommodation. It was no longer necessary to keep constantly arousing the patient, who talked somewhat incoherently. The pulse was 150, but full, strong, quick, almost angry. The spells of vomiting still occurred at intervals without affecting the pulse. From this time the patient gradually got better, all the symptoms subsiding regularly.

CASE 2.—Mr. James White was called at 10 A. M. to see a young woman about 19 years of age, who, from jealousy, had endeavoured to destroy herself by taking two fluidounces of tincture of opium. Three hours had elapsed since the ingestion of the poison. He roused her with some difficulty; gave an emetic of mustard, which, proving ineffective, was followed by sulphate of zinc and titillation of the fauces; copious emesis resulted. An infusion of tannin was then administered, and followed shortly by 30 drops of the tincture of belladonna, which latter dose was repeated in fifteen minutes. The stupor still increasing, the same dose was again given after the same interval. At this stage the patient swallowed with difficulty, but was at length compelled to drink a cup of strong tea and brandy. The stupor rapidly increasing, a teaspoonful of tincture of belladonna was administered, and turpentine injections were given. Electricity, sinapisms to epigastrium and extremities, and flagellation were also all used.

Five hours had now elapsed since the poison was taken. Although the characteristic effects of the belladonna on the pupil were becoming manifest, yet thirty drops more of the tincture were given, as her condition, although improved, immediately retrograded on any suspension of active treatment.

After this the belladonna was repeated in 30 drop doses at half hour intervals, until the pupils were widely dilated; no other belladonna symptoms were elicited.

At 5 o'clock her condition had so much improved that she was considered out of danger. At 7 and 9 improvement still continued. She ultimately recovered.

Dr. James E. Garretson has favoured me with notes of the following case:—

CASE 3.—A young man took by mistake six grains of the acetate of morphia and three grains of opium, when retiring to bed for the night. At five o'clock the next morning he was seen by Dr. Garretson, who found the man in a state of profound coma, from which he could not be aroused. Without pursuing any other treatment whatever, Dr. Garretson gave in divided doses within half an hour two and a half teaspoonfuls of the officinal tincture of belladonna. In one hour the patient was semi-conscious; in four hours completely so. He made a good recovery.

For the following two cases I am indebted to Dr. M. D. Knight:—

CASE 4.—A man aged forty-five years, intemperate, drank with suicidal intent six fluidrachms of laudanum, U. S. P. About an hour afterwards Dr. Knight found him narcotized and failed to induce vomiting by means of large doses of ipecacuanha, sulphate of zinc, etc. No stomach pump was at hand. An hour and a half after the ingestion of the poison the symptoms of narcotism were complete, and the respirations had fallen to from six to eight per minute. About viij grains of the extract of belladonna rubbed up in some water were given in divided doses by the stomach during the next four hours. During this period respirations were only kept up by the use of cold douche, etc. At the end of the time the pupils began to dilate and the respirations became more natural, also there were signs of returning consciousness. He now vomited freely, and after this recovered rapidly.

CASE 5.—Mr. ——, aged thirty-three years, took for severe pain a f℥ss of Tinctura opii, obtained at a country store and of unknown strength. He was seen by Dr. Knight an hour afterwards, and as he was still suffering he received at once, hypodermically, $\frac{1}{4}$ grain of morphia, which dose was repeated in ten minutes. Almost at once the patient dropped into a sound sleep, and some hours afterwards the doctor was recalled. The pupils at this time were firmly contracted; the pulse very weak, 150 per minute; the respiration almost suspended, so that it was necessary to constantly dash cold water on his face, or to shake him violently to keep him breathing. It was almost impossible to arouse him at all. One grain of the extract of belladonna was ordered every twenty minutes, and two grains were injected at once into the calf of the leg, and in the next three hours he received between six and eight grains of belladonna extract. At the end of this time the pupils began to dilate, the respirations to become more frequent and regular, and it became more easy to arouse the patient, who henceforth convalesced without further treatment. There was no emesis at any time.

In the following cases the alkaloids were given hypodermically.

Case 6.—Man, aged about 35, completely convalescent from relapsing fever, except in suffering from very severe neuralgic pains.

Date.	Dose.	Pulse and respiration.	Remarks.
8.15 12 M.	½ gr. mor. 1-50 gr.atr.	Pulse 88, half an hour afterwards 114.	The man went to bed, but slept very little. Some hours afterwards his eyes were very red, his throat very dry, and he was very dizzy. After supper there was severe vomiting, and the next morning he was very drowsy.
8 16	½ gr. mor. 1-50 gr.atr.	....	Went to bed; did not sleep any; dizzy, with very red eyes, dry throat and mouth, and slight flush of face during the afternoon. Severe vomiting after supper.
8.17 11.30 A.M.	½ gr. mor.	11.30 A.M., pulse 78, resp. 20; 1.15 P.M., pulse 88, resp. 16	At 1.15 dizzy and sleepy. Slept an hour very heavily; also went to sleep at supper, and did not awake till morning.
8.19 2.15 P.M.	½ gr. mor. 1-40 gr.atr.	2.15 P.M., pulse 78, resp. 22; 3.30 P.M. pulse 100, resp. 24; 8 P.M. pulse 80, resp. 22	Very drowsy, and slept a great deal during the afternoon; no flush. Vomited at 5 P.M. At 8 P.M. pupils natural.
8.22	½ gr. mor.	12 noon, pulse 72 resp. 20; 3 P M. pulse 76, resp. 18	At 3 P.M. pupils not markedly contracted. He was more drowsy, and slept more than the day before.
8.23	¾ gr. mor. 1-40 gr.atr.	11.30 A.M. pulse 82, resp. 24; 2.30 P.M. pulse 86, resp. 18; 5 P.M. pulse 120	Went to sleep, and slept for an hour after the first injection. After the second injection, slept until tea time. At 5 P.M. his face was very much flushed, and his mouth and throat dry. After tea he vomited. Slept heavily all night.
8.24 12 M.	¾ gr. mor.	12 M. pulse 104, resp. 23; 2 P.M. pulse 80, resp. 22; 5 P.M. pulse 84, resp. 23	Slept only a single hour during the afternoon, although very drowsy.
8.26	¾ gr. mor. 1-30 gr.atr.	....	Slept well about an hour. He thinks he was not quite so drowsy as day before.
8.29	1 fluidrachm distilled water	....	Exceedingly drowsy; slept heavily all afternoon; waked with difficulty. He states that he was greatly relieved of his pain.
8 30 12 M.	6-7 gr.mor.	12 noon, pulse 100, resp. 20; 3 P.M. pulse 96, resp. 20; 7.30 P.M. pulse 92, resp. 20	Slept about two hours; not asleep at 3 P.M. Says he was not so drowsy and heavy as day before.
6.31	2 fluidrachms water	....	Slept two hours. Says he was very drowsy and sleepy.
9.1	30 gtt. Magendie's sol.	....	Affected more than at any time before. Sleeping, with occasional wakings eighteen hours.
9.5	gr. j. mor.	....	Slept an hour and a half. Moderately drowsy and sleepy all evening.
9.6	gr. j. mor. 1-30 gr.atr.	....	Slept about as day before, but not so drowsy afterwards as day before.
9.9	½ gr. mor. 1-30 gr.atr.	....	Face a little flushed. Slept about the same as the day before.

Case 7.—Man, aged 47.

Date.	Dose.	Pulse and respiration.	Remarks.
8.13 12 M.	½ gr. mor.	12 noon, pulse 72; 1 P.M. pulse 70	Slept, but not heavily, and with waking intervals, until the next morning.
8.15	½ gr. mor. 1-50 gr. atr	12 noon, pulse 64; 2 P.M. pulse 86	He felt heavy and sleepy all afternoon and evening, but could not sleep, except for 2 hours, and was wakeful at night. The next day he was stupid, not sleepy.
8.23	¾ gr. mor. at 11.30 A.M. At 2.30 P.M. 1-40 gr. atr.	11.30, pulse 70, resp. 23; 2.30 P.M. pulse 80, resp. 16	Half an hour after receiving the injection he went to sleep, and slept until 2.30 P.M., when he was awaked; at this time his pupils were "pin holes." After the atropia he went to sleep again, and slept heavily until 5 P.M. After this he did not sleep until 10 P.M., and was wakeful through the night. No vomiting on the day of injection or the next day.
8.24 12 M.	¾ gr. mor.	12 noon, pulse 72, resp. 20; 2 P.M. pulse 68, resp. 18; 5 P.M. pulse 84; resp. 23	He slept heavily all afternoon, and the pupils were very much contracted until 5 P.M.
8.27	¾ gr. mor. 1-40 gr atr.	....	He slept very little during the afternoon, although somewhat drowsy, and none at all in the evening until bedtime. He had a severe chill in the afternoon, which was not followed by distinct fever. The mouth and throat were dry, and the face a little flushed.
6.28	1 fluidrachm distilled water.	....	It had no effect.

Case 8.—Adult man.

Date.	Dose.	Pulse and respiration.	Remarks.
9.19 2.	gr. j. mor.	2 P.M. pulse 77, resp. 15; 4 P. M. pulse 76, resp. 14	At 4 P.M. he had not slept, although he felt very sleepy and very dizzy; his pupils were slightly contracted. At 7 P.M. he had nausea, and had been all afternoon very sleepy and drowsy, having slept, however, only half an hour. His pupils were contracted.
9.21 12 M.	gr. j. mor. 1-40 gr. atr.	12 noon, pulse 76, resp. 12; 2 P.M. pulse 76, resp. 13	At 2 he was sound asleep, but awoke readily. He had been asleep only half an hour, and slept no more during the afternoon. He was even more sleepy than the day before, but not nearly so dizzy. Pupils natural.

CASE 9.—Adult man, supposed to be suffering from commencing locomotor ataxia.

Date.	Dose.	Pulse and respiration.	Remarks.
9.6 12 M.	gr. j. mor.	12 noon, temp. 99°, pulse 72, resp. 25; 1.30 P.M. temp. 97°, pulse 60, resp. 17; 6 P.M. temp. 97°, pulse 60, resp. 20	He went to sleep directly after receiving injection, and slept an hour and twenty minutes. Was drowsy all afternoon and evening. No vomiting.
9.8 12 M.	gr. j. mor. 1-40 gr. atr.	12 noon, temp. 99°, pulse 70, resp. 20; 2 P.M. temp. 97°, pulse 70, resp. 20	He went to sleep at once, and slept a little over two hours; did not feel sleepy again until after supper. Mouth dry; face flushed; felt burning heat through body.
9.9 11.30 P.M.	1-40 gr. atr.	11.30 P.M. temp. 98°, pulse 56, resp. 24; temp. 98°, pulse 68, resp. 22	He went asleep and slept three hours. The face at 2 P.M. was a good deal flushed, but not more so than the day before. Mouth very dry. Trembling, with disordered vision and diplopia.

CASE 10.—Adult man, with pneumonic phthisis.

Date.	Dose.	Pulse and respiration.	Remarks.
9.15 12 M.	gr. j. mor.	12 noon, pulse 72, resp. 24; 2 P.M. pulse 67, resp. 16	At 2 he had slept ever since the injection, an unnatural dreamy sleep, with phantasms. Slept until 4 P.M.; did not go asleep after this until 1.30 A.M.
9.16 12 M.	gr. j. mor. 1-50 gr. atr.	12 noon, pulse 60, resp. 22; 2 P.M. pulse 72, resp. 20; 7 P.M. pulse 60, resp. 20	At 2 P.M. had not slept any; vision good; pupils natural; slight thirst; face not flushed, although it had been; tongue moist; slept two hours after this.
9.19	¼ gr. mor.	2 P.M. pulse 80, resp. 31; 4 P.M. pulse 48 full, resp. 23	By voluntary effort kept himself awake through the afternoon and evening. Pupils were much contracted all afternoon and evening. Marked dizziness. He vomited his supper.
9.20 12 M.	½ gr. mor. 1-40 gr. atr.	12 noon, pulse 68, resp. 26; 2 P.M. pulse 86, resp. 22	As yesterday, except that the pupils were dilated rather than contracted, and the dizziness was not so marked; also he did not vomit.

ART. IV.—*Method of Using Strychnia in the Treatment of Optic Nerve Atrophy and Allied Nervous Affections.* By JULIAN J. CHISOLM, M.D., Clinical Professor of Eye and Ear Diseases in the University of Maryland, and Surgeon in Charge of the Baltimore Eye and Ear Institute.

IT is now nearly two years since I commenced experiments hypodermically with strychnia, for the relief of dimness of vision, in cases of optic nerve atrophy. With the usual timidity of one dealing knowingly with a